Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dayton® Portable Oil-Fired Heaters

Description

Dayton Models 2E510F, 2E511F, 3E218E, and 3E219E are 40,000 to 155,000 Btu/Hr heaters. These heaters use only Kerosene, #1/#2 diesel/fuel oil, JET A or JP-8 fuels for combustion and electricity to run the motor. They are primarily intended for indoor and outdoor temporary heating of well-ventilated buildings under construction, alteration, or repair. They may be used in agricultural, industrial, and commercial environments. **Products of combustion are vented into the area being heated.**

Unpacking

1. Remove all packing items supplied with heater for shipment.
2. Remove all items from carton.
3. Check heater for any shipping damage. If heater is damaged, promptly inform dealer where you purchased heater.

Figure 1 – Models 2E510F and 2E511F

Figure 2 – Models 3E218E and 3E219E

General Specifications

	Model 2E510F	Model 2E511F	Model 3E218E	Model 3E219E
Output Rating	40,000 Btu/Hr	60,000 Btu/Hr	110,000 Btu/Hr	155,000 Btu/Hr
Fuel	Kerosene, #1/#2 diesel/fuel oil, JET A or JP-8 fuels			
Fuel Tank Capacity	3.0 U.S. Gallons	5.0 U.S. Gallons	9.0 U.S. Gallons	13.5 U.S. Gallons
Fuel Consumption	0.3 U.S. Gallons/Hr	0.44 U.S. Gallons/Hr	0.8 U.S. Gallons/Hr	1.14 U.S. Gallons/Hr
Motor	1725 RPM	1725 RPM	3450 RPM	3450 RPM
Hot Air Output (CFM)	170	180	490	550
Air Pump Pressure	3.0 psi	3.4 psi	5.3 psi	5.4 psi
Shipping Weight	32 Lb	33 Lb	54 Lb	63 Lb
Heater Weight without Fuel	28 Lb	29 Lb	46 Lb	54 Lb

Form 5S1792

Printed in U.S.A.
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Dayton® Portable Oil-Fired Heaters

Electrical Specifications

	Model 2E510F	Model 2E511F	Model 3E218E	Model 3E219E
Electrical Input	120 Volt/60 Hertz	120 Volt/60 Hertz	120 Volt/60 Hertz	120 Volt/60 Hertz
Amperage (during normal run)	2.0	2.0	3.6	3.6

Product Identification

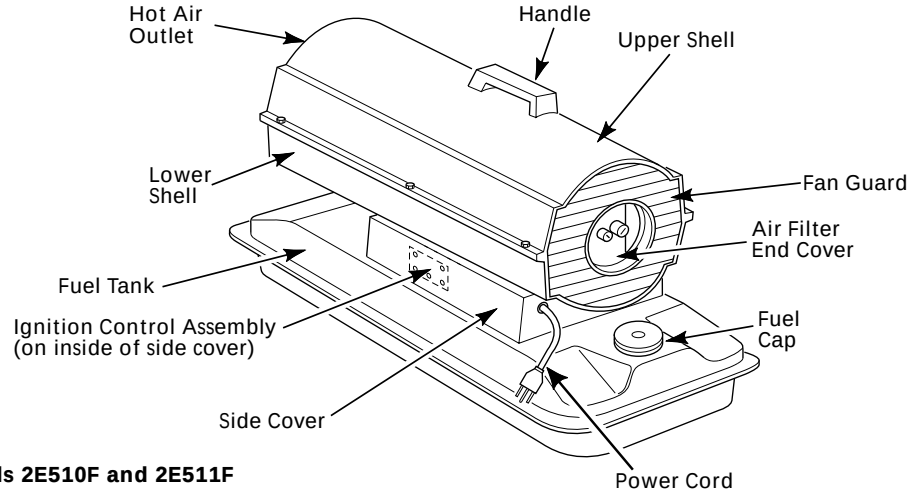

Figure 3 – Models 2E510F and 2E511F

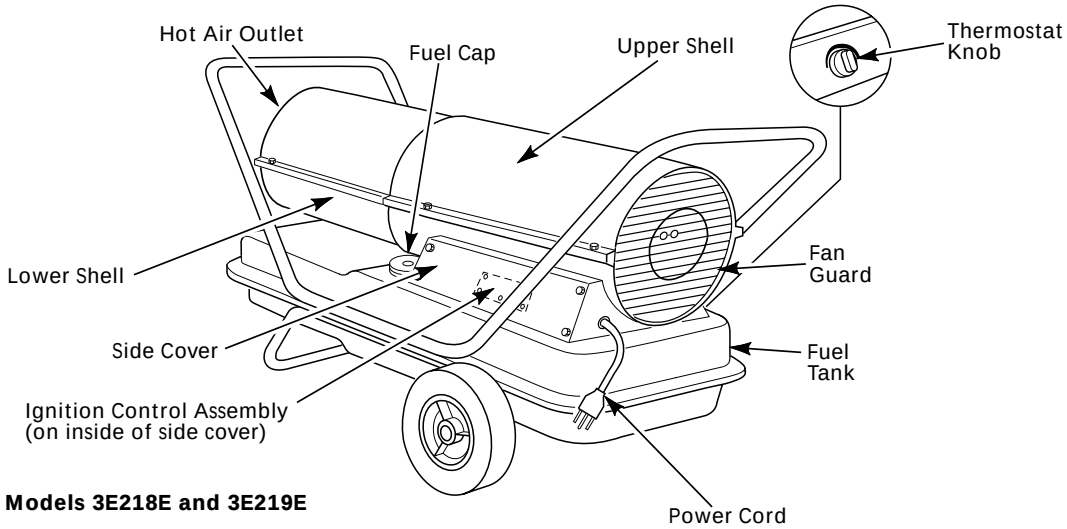

Figure 4 – Models 3E218E and 3E219E

Models 2E510F, 2E511F, 3E218E, and 3E219E

General Safety Information

Make certain you read and understand all warnings. Keep these instructions for reference. They are your guide to safe and proper operation of this heater.

Safety information appears throughout these instructions. Pay close attention to them. Below are definitions for the safety information listed throughout this manual.

⚠ DANGER Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, WILL result in IMMEDIATE serious personal injury or death.

⚠WARNING Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, COULD result in severe personal injury or death.

⚠ CAUTION Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, COULD result in minor personal injury, product or property damage.

IMPORTANT: Not every possible circumstance that might involve a hazard can be anticipated. The warnings in this manual and on tags or decals affixed to the unit are therefore not all-inclusive. If a procedure, work method, or operating technique not specifically recommended by Dayton is used, you must make sure it is safe for you and others. You should also ensure that equipment will not be damaged or made unsafe by the operating or maintenance method you choose.

⚠WARNING ***This product contains and/or generates chemicals known to the State of California to cause cancer or birth defects, or other reproductive harm.***

⚠ DANGER ***Carbon monoxide poisoning may lead to death! Some people are more affected by carbon monoxide than others. Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, and/or nausea. If you have these signs, the heater may not be operating properly, or the areas may not be sufficiently ventilated. Get fresh air at once! Have heater serviced.***

⚠WARNING ***Improper use of this heater can cause serious injury or death from burns, fire, explosion, electrical shock, and carbon monoxide poisoning.***

Make certain you read and understand all warnings. Keep these instructions for reference. They are your guide to safe and proper operation of this heater.

⚠WARNING ***Use only Kerosene, #1/#2 diesel/fuel oil, JET A or JP-8 fuels to avoid risk of fire or explosion. Never use gasoline, naphtha, paint thinners, alcohol, or other highly flammable fuels.***

- ***Fueling***

  a) Personnel involved with fueling shall be qualified and thoroughly familiar with the manufacturer's instructions and applicable federal, state, and local regulations regarding the safe fueling of heating units.

  b) Only the type of fuel specified on the heater's data plate shall be used.

  c) All flame, including the pilot light, if any, shall be extinguished and the heater allowed to cool, prior to fueling.

  d) During fueling, all fuel lines and fuel-line connections shall be inspected for leaks. Any leaks shall be repaired prior to returning the heater to service.

  e) At no time shall more than one day's supply of heater fuel be stored inside a building in the vicinity of the heater. Bulk fuel storage shall be outside the structure.

  f) All fuel storage shall be located a minimum of 25 feet from heaters, torches, welding equipment, and similar sources of ignition (exception: the fuel reservoir integral with the heater unit).

  g) Whenever possible, fuel storage shall be confined to areas where floor penetrations do not permit fuel to drip onto or be ignited by a fire at lower elevation.

  h) Fuel storage shall be in accordance with the federal, state, or local authority having jurisdiction.

- ***Never use heater where gasoline, paint thinner, or other highly flammable vapors are present.***
- ***Follow all local ordinances and codes when using heater.***
- ***Use only in well-vented areas. Provide at least three square feet of fresh, outside air for each 100,000 Btu/Hr of rating.***
- ***Use only in places free of flammable vapors or high dust content.***
- ***Use only with the electrical voltage and frequency specified on model plate.***
- ***Use only a three-prong, grounded extension cord.***

Dayton® Portable Oil-Fired Heaters

General Safety Information (Continued)

- ***Heaters used in the vicinity of tarpaulins, canvas, or similar enclosure materials shall be located a safe distance from such materials. The recommended minimum safe distance is 10 feet. It is further recommended that these enclosure materials be of a fire retardant nature. These enclosure materials shall be securely fastened to prevent them from igniting or from upsetting the heater due to wind action.***
- ***Minimum heater clearances from combustibles:***

  Outlet: 8 Ft. Sides: 4 Ft.
  Top: 4 Ft. Rear: 4 Ft.
- ***Locate heater on a stable and level surface while hot or running or a fire may occur.***
- ***When moving or storing heater, keep heater in a level position or fuel spillage may occur.***
- ***Keep children and animals away from heater.***
- ***Unplug heater when not in use.***
- ***This heater is equipped with thermostat, heater may start anytime.***
- ***Never use heater in living or sleeping areas.***
- ***Never block air inlet (rear) or air outlet (front) of heater.***
- ***Never move, handle, refuel, or service a hot, operating, or plugged-in heater.***
- ***Never attach duct work to front or rear of heater.***
- ***<u>Warning to New York City Residents</u> For Use Only At Construction Sites in accordance with applicable NYC codes under NYCFD certificate of approval #4803, #4899, #4908, #4909, or #4934.***

Theory of Operation

THE FUEL SYSTEM

The air pump forces air through the air line. The air is then pushed through the burner head nozzle. This air causes fuel to lift from the tank. A fine mist of fuel is sprayed into the combustion chamber.

THE AIR SYSTEM

The motor turns the fan. The fan pushes air into and around the combustion chamber. This air is heated and provides a stream of clean, hot air.

THE IGNITION SYSTEM

The ignition control assembly provides power to the ignitor. This ignites the fuel/air mixture in the combustion chamber.

THE FLAME-OUT CONTROL SYSTEM

This system causes the heater to shut down if the flame goes out.

Fuels

⚠WARNING ***Use only Kerosene, #1/#2 diesel/fuel oil, JET A or JP-8 fuels to avoid risk of fire or explosion. Never use gasoline, naphtha, paint thinners, alcohol, or other highly flammable fuels.***

Use only kerosene, #1/#2 diesel/fuel oil, JET A or JP-8 fuels. Heavier fuels such as No. 2 fuel oil or No. 2 diesel fuel may also be used but will result in:

- clogged fuel filter and nozzle
- the need of nontoxic anti-icer in fuel during very cold weather

IMPORTANT: Use a clearly marked fuel storage container approved and designed for Kerosene, #1/#2 Diesel/ Fuel oil, JET A or JP-8 fuels only. Be sure storage container is clean. Foreign matter such as rust, dirt, or water will cause the flame-out control to shut down heater. Foreign matter may also require you to clean fuel system often.

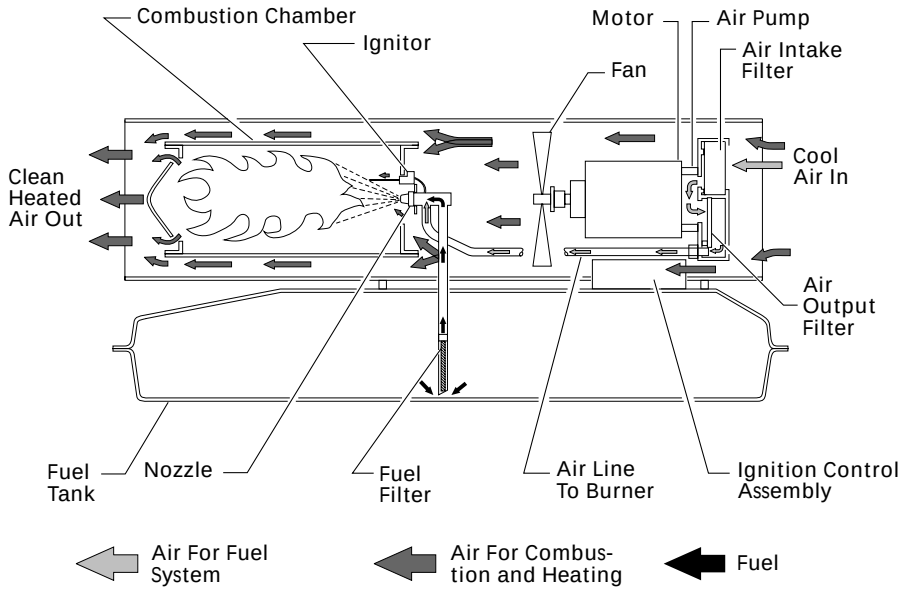

Figure 5 - Cross Section Operational View

Models 2E510F, 2E511F, 3E218E, and 3E219E

Assembly

(For Models 3E218E and 3E219E Only)

These models are furnished with wheels and handles. Wheels, handles, and the mounting hardware are found in the shipping carton.

TOOLS NEEDED

- Medium Phillips Screwdriver
- 3/8" Open or Adjustable Wrench
- Hammer

1. Slide axle through wheel support frame. Install wheels on axle.

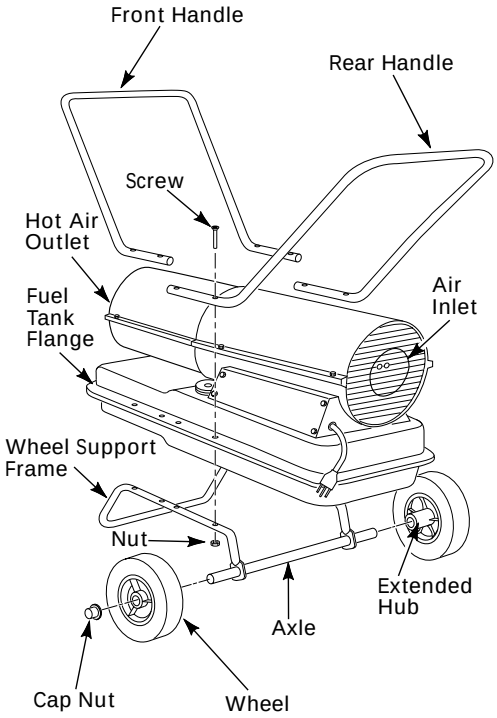

Figure 6 - Wheel and Handle Assembly, Models 3E218E and 3E219E Only

IMPORTANT: When installing wheels, point extended hub of wheels toward wheel support frame (See Figure 6).

2. Place cap nuts on axle ends. Gently tap with hammer to secure.
3. Place heater on wheel support frame. Make sure air inlet end (rear) of heater is over wheels. Line up holes on fuel tank flange with holes on wheel support frame.
4. Place handles on top of fuel tank flange. Insert screws through handles, fuel tank flange, and wheel support frame. Attach nut finger tight after inserting each screw.
5. After inserting all screws, tighten nuts firmly.

Ventilation

⚠WARNING ***Follow the minimum fresh, outside air ventilation requirements. If proper fresh, outside air ventilation is not provided, carbon monoxide poisoning can occur. Provide proper fresh, outside air ventilation before running heater.***

Provide a fresh air opening of at least three square feet for each 100,000 Btu/Hr rating. Provide extra fresh air if more heaters are being used.

Example: A 155,000 Btu/Hr heater requires one of the following:

- a two-car garage door (16-foot-wide opening) raised 3.5 inches
- a single-car garage door (9-foot-wide opening) raised 6.5 inches
- two, 30-inch windows raised 11.5 inches

Operation

⚠WARNING ***Review and understand the warnings in the General Safety Information section. They are needed to safely operate this heater. Follow all local codes when using this heater.***

TO START HEATER

1. Follow all ventilation and safety information.
2. Locate heater to provide maximum circulation of the heated air. Follow all location requirements noted in *General Safety Information,* page 3.
3. Fill fuel tank with Kerosene or No. 1 fuel oil.
4. Attach fuel cap.
5. If equipped, turn thermostat knob clockwise to the HIGH position.
6. Plug power cord of heater into three-prong, grounded extension cord. Extension cord must be at least six feet long.

EXTENSION CORD WIRE SIZE REQUIREMENTS

- 6 to 10 feet long, use 18 AWG rated cord.
- 11 to 100 feet long, use 16 AWG rated cord.
- 101 to 200 feet long, use 14 AWG rated cord.

7. Plug extension cord into standard 120 Volt/60 hertz, three-hole, grounded outlet.

NOTE: Ignitor will preheat for five seconds, then heater will start.

8. If equipped, adjust thermostat knob to the desired setting.

NOTE: If equipped, a cold heater may affect the thermostat setting. Further adjustments may be needed until the heater cycles at the desired setting. This thermostat is a general-heating control. It is not intended for precise temperature control.

TO STOP HEATER

Unplug extension cord from outlet.

TO RESET HEATER

1. Unplug extension cord from outlet and wait 10 seconds (two minutes if heater has been running).
2. Repeat steps under *To Start Heater*.

Dayton® Portable Oil-Fired Heaters

Maintenance

⚠WARNING ***Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur.***

UPPER SHELL REMOVAL

1. Remove screws along each side of heater using 5/16" nut-driver. These screws attach upper and lower shells together (See Figures 7 and 8).
2. Lift upper shell off.
3. Remove fan guard.

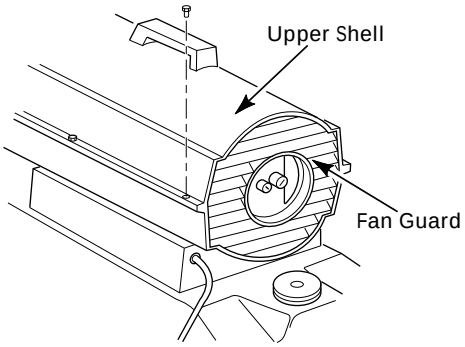

Figure 7 - Upper Shell Removal, Models 2E510F and 2E511F

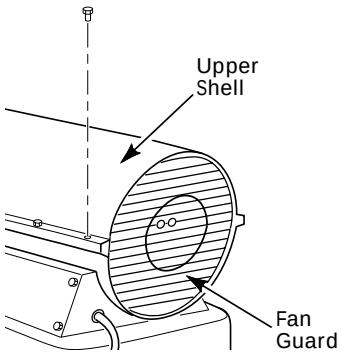

Figure 8 - Upper Shell Removal, Models 3E218E and 3E219E

FAN

IMPORTANT: Remove fan from motor shaft before removing motor from heater. The weight of the motor resting on the fan could damage the fan pitch.

1. Remove upper shell (see Figures 7 and 8).
2. Use 1/8" Allen wrench to loosen setscrew which holds fan to motor shaft.
3. Slip fan off motor shaft.
4. Clean fan using a soft cloth moistened with Kerosene or solvent.
5. Dry fan thoroughly.
6. Replace fan on motor shaft. Place fan hub flush with end of motor shaft (See Figure 9).
7. Place setscrew on flat of shaft. Tighten setscrew firmly (40-50 inch-pounds).
8. Replace fan guard and upper shell.

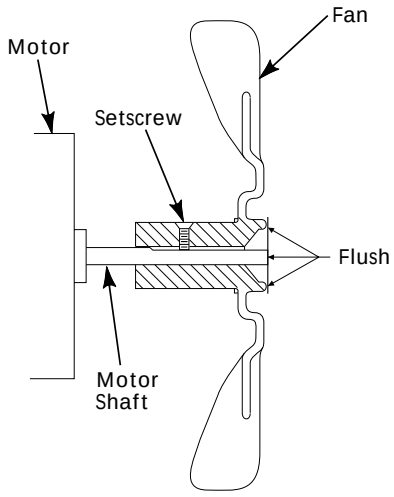

Figure 9 - Fan Cross Section

AIR OUTPUT, AIR INTAKE, AND LINT FILTERS

1. Remove upper shell (See Figures 7 and 8).
2. Remove filter end cover screws using 5/16" nut-driver (See Figures 10 and 11).
3. Remove filter end cover.
4. Replace air output and lint filters.
5. Wash and dry with soap and water or replace air intake filter.
6. Replace filter end cover.
7. Replace fan guard and upper shell.

IMPORTANT: Do not oil filters.

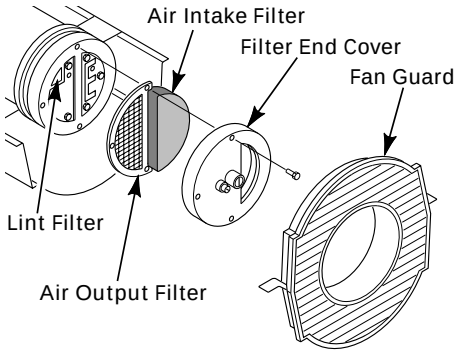

Figure 10 - Air Output, Air Intake, and Lint Filters, Models 2E510F and 2E511F

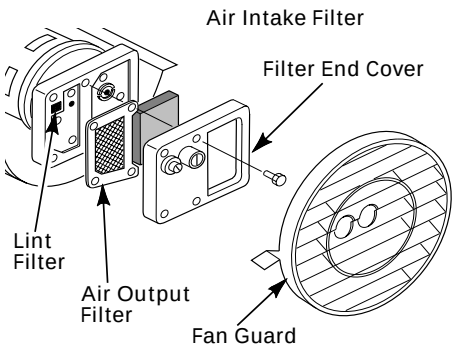

Figure 11 - Air Output, Air Intake, and Lint Filters, Models 3E218E and 3E219E

Models 2E510F, 2E511F, 3E218E, and 3E219E

Maintenance (Continued)

PUMP PRESSURE ADJUSTMENT

1. Remove pressure gauge plug from filter end cover (See Figure 12).
2. Install accessory pressure gauge (Part Number HA1180) (See Figure 13).
3. Start heater (See *Operation*, page 5). Allow motor to reach full speed.
4. Adjust pressure. Turn relief valve to right to increase pressure. Turn relief valve to left to decrease pressure. See specification chart below for correct pressure for each model.

Model	Pump Pressure
2E510F	3.0 psi
2E511F	3.4 psi
3E218E	5.3 psi
3E219E	5.4 psi

5. Remove pressure gauge. Replace pressure gauge plug in filter end cover.

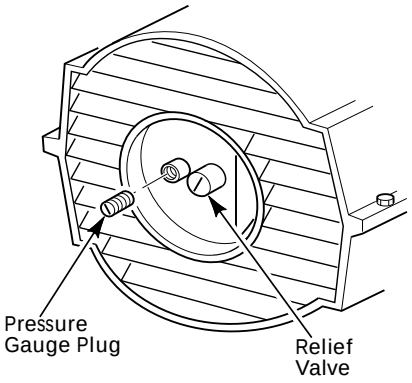

Figure 12 - Pressure Gauge Plug Removal

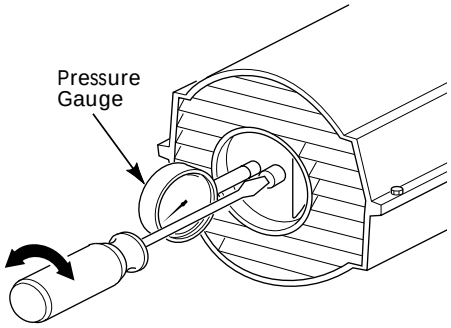

Figure 13 - Adjusting Pump Pressure

FUEL FILTER

1. Remove side cover screws using 5/16" nut-driver.
2. Remove side cover.
3. Pull upper fuel line off fuel filter neck (See Figure 14).
4. Carefully pry bushing, fuel filter, and lower fuel line (Models 3E218E and 3E219E only) out of fuel tank (See Figure 15).
5. Wash fuel filter with clean fuel and replace in tank.
6. Attach upper fuel line to fuel filter neck.
7. Replace side cover.

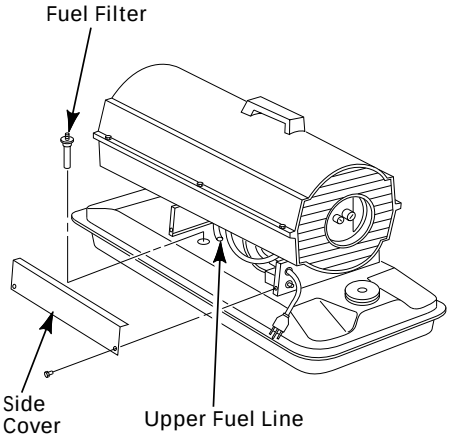

Figure 14 - Fuel Filter Removal, Models 2E510F and 2E511F

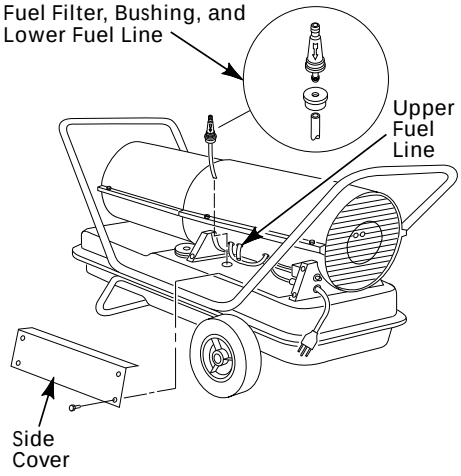

Figure 15 - Fuel Filter Removal, Models 3E218E and 3E219E

Dayton® Portable Oil-Fired Heaters

Maintenance (Continued)

IGNITOR

1. Remove upper shell and fan guard (See page 6).
2. Remove fan (See page 6).
3. Remove 4 side cover screws with a 5/16" nut driver. Remove side cover (See Figures 14 and 15).
4. Disconnect ignitor wires (yellow for 3E218E and 3E219E, gray for 2E510F and 2E511F) from ignition control assembly (See Figure 16). Pull the ignitor wires up through the hole in the lower shell.
5. Disconnect fuel line hose and air line hose. Remove photocell from photocell bracket (See Figure 16).

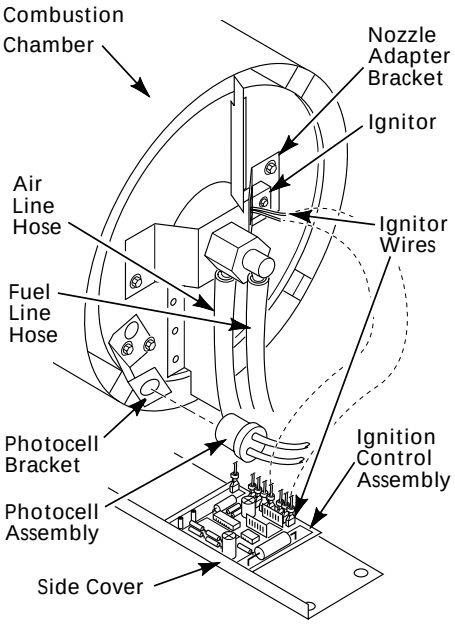

Figure 16 - Disconnecting Ignitor Wires from Ignition Control Assembly

6. Remove combustion chamber. Stand combustion chamber on end with nozzle adapter bracket on top (See Figure 17).

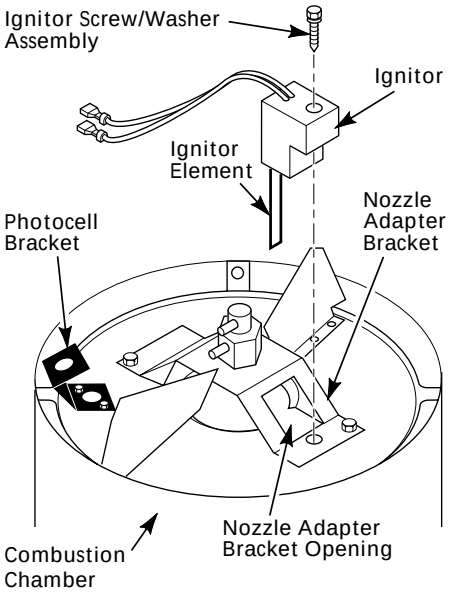

Figure 17 - Ignitor Replacement

7. Remove ignitor screw with a 1/4" nut driver. Carefully remove ignitor from nozzle adapter bracket.

⚠ CAUTION ***Do not bend or strike ignitor element. Handle with care.***

8. Carefully remove replacement ignitor from styrofoam packing.
9. Carefully guide ignitor into opening in nozzle adapter bracket. Do not strike ignitor element. Attach ignitor to nozzle adapter bracket with screw using a 1/4" nut driver (See Figure 17). Torque 8 to 15 in. lbs. Do not over torque.
10. Replace combustion chamber.
11. Route the ignitor wires back down through the hole in the lower shell. Connect wires to the ignition control assembly.
12. Replace side cover (See Figures 14 and 15).
13. Connect and route fuel line hose and air line hose to nozzle adapter assembly (see *Fuel and Air Line Replacement and Proper Routing*, page 9).
14. Replace photocell in photocell bracket. Route wires as shown in Figure 18, 19, or 20.
15. Replace fan (See page 6).
16. Replace fan guard and upper shell (See page 6).

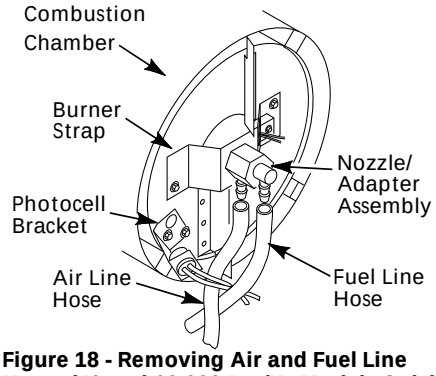

Figure 18 - Removing Air and Fuel Line Hoses (40 and 60,000 Btu/Hr Models Only)

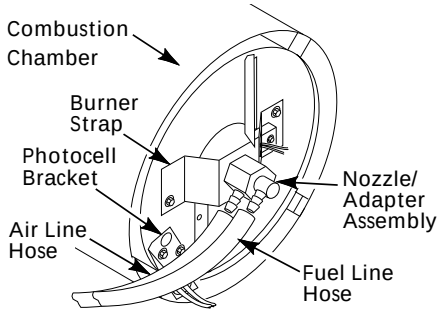

Figure 19 - Removing Air and Fuel Line Hoses (110,000 Btu/Hr Model Only)

Models 2E510F, 2E511F, 3E218E, and 3E219E

Maintenance (Continued)

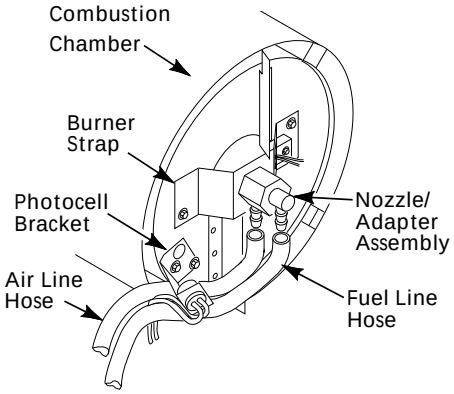

Figure 20 - Removing Air and Fuel Line Hoses (155,000 Btu/Hr Model Only)

NOZZLE

1. Remove upper shell (See page 6).
2. Remove fan (See page 6).
3. Remove fuel and air line hoses from nozzle assembly (See Figure 18, 19, or 20).
4. Turn nozzle assembly 1/4 turn to left and pull toward motor to remove (See Figure 21).

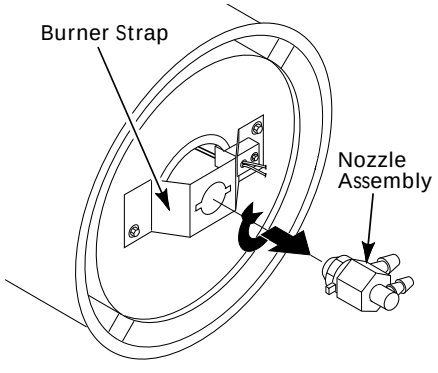

Figure 21 - Removing Nozzle Assembly, All Models

5. Place plastic hex-body into vise and lightly tighten.
6. Carefully remove nozzle from the nozzle adapter using 5/8" socket wrench.

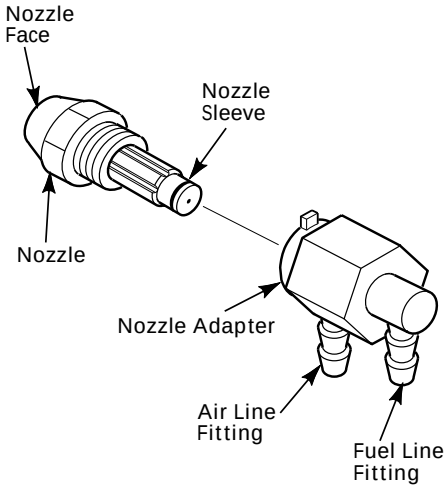

Figure 22 - Nozzle and Nozzle Adapter, All Models

7. Blow compressed air through face of nozzle. This will free any dirt in nozzle area.
8. Inspect nozzle sleeve for damage.
9. Replace nozzle into nozzle adapter until nozzle seats. Tighten 1/3 turn more using 5/8" socket wrench (40-45 inch-pounds).
10. Attach nozzle assembly to burner strap.
11. Attach fuel and airline hoses to nozzle adapter assembly (see *Fuel and Air Line Replacement and Proper Routing)*.
12. Replace fan (See page 6).
13. Replace fan guard and upper shell.

FUEL AND AIR LINE REPLACEMENT AND PROPER ROUTING

1. Remove upper shell (See page 6).
2. Remove side cover screws using 5/16" nut driver.
3. Remove side cover.
4. Inspect fuel and air line hoses for cracks and/or holes. If fuel line hose is damaged, disconnect from nozzle adapter (See Figure 18, 19, or 20) and from fuel filter (See page 7). If air line hose is damaged, disconnect from nozzle adapter (See Figure 18, 19, or 20) and from barb fitting on pump end cover (See Figure 23).
5. Install new air and/or fuel line. Attach one end of air line hose to barb fitting on pump end cover (See Figure 23) and the other end to nozzle adapter (See Figure 18, 19, or 20). Attach one end of fuel line hose to fuel filter (See page 7) and the other end to nozzle adapter (See Figure 18, 19, or 20).

   NOTE*:* Route hoses as shown in Figure 18, 19, or 20 according to Model. Hoses are not to touch photocell bracket.
6. Replace side cover.
7. Replace upper shell and fan guard (See page 6).

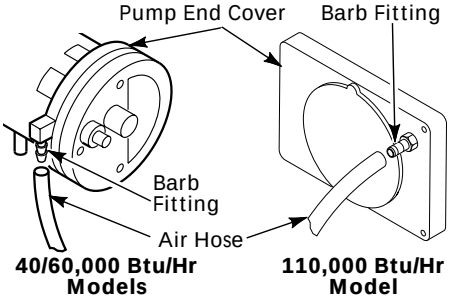

Figure 23 - Air Hose to Barb Fitting

Dayton® Portable Oil-Fired Heaters

Maintenance (Continued)

PUMP ROTOR

(Procedure if rotor is binding)

1. Remove upper shell (See page 6).
2. Remove filter end cover screws using 5/16" nut-driver (See Figures 24 and 25).
3. Remove filter end cover and air filters.
4. Remove pump plate screws using 5/16" nut-driver.

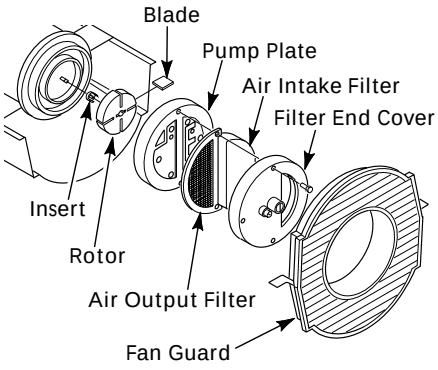

Figure 24 - Rotor Location, Models 2E510F and 2E511F

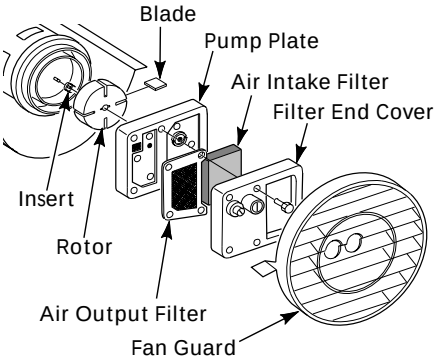

Figure 25 - Rotor Location, Models 3E218E and 3E219E

5. Remove pump plate.
6. Remove rotor, insert, and blades.
7. Check for debris in pump. If debris is found, blow out with compressed air.
8. Install insert and rotor.
9. Check gap on rotor. Adjust to .003"/.004" if needed (See Figure 26).

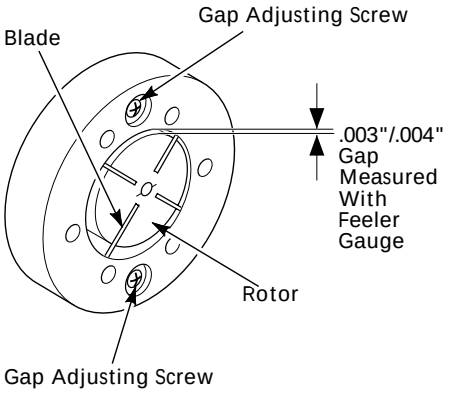

Figure 26 - Gap Adjusting Screw Locations

NOTE: Rotate rotor one full turn to insure the gap is .003"/.004" at tightest position. Adjust if needed.

10. Install blades, pump plate, air filters, and filter end cover.
11. Replace fan guard and upper shell.
12. Adjust pump pressure (See page 7).

NOTE: If rotor is still binding, proceed as follows.

13. Perform steps 1 through 6 above.
14. Place fine grade sandpaper (600 grit) on flat surface. Sand rotor lightly in "figure 8" motion four times (See Figure 27).
15. Reinstall insert and rotor.
16. Perform previous steps 10 through 12.

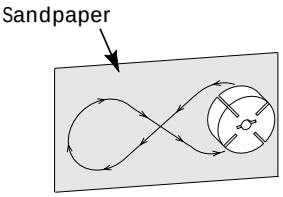

Figure 27 - Sanding Rotor

IGNITION CONTROL ASSEMBLY

(PROCEDURE FOR REPLACING FUSE ON MODELS 3E218E AND 3E219E)

⚠WARNING ***High Voltage!***

1. Unplug heater.
2. Remove side cover screws (4) using 5/16" nut-driver to expose ignition control assembly.
3. Remove fuse cover.
4. Remove fuse from fuse clips.
5. Replace fuse with fuse of the same type and rating (GMA-10). Do not substitute a fuse with a higher current rating.
6. Replace fuse cover.
7. Replace side cover.

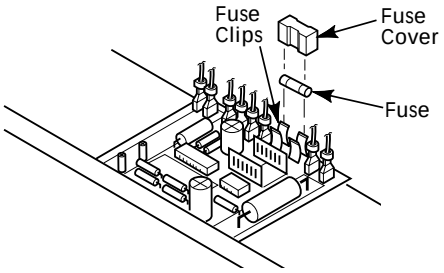

Figure 28 - Replacing Fuse

Models 2E510F, 2E511F, 3E218E, and 3E219E

Maintenance (Continued)

STORING TRANSPORTING, OR SHIPPING

NOTE: If shipping, transport companies require fuel tanks to be empty.

1. Drain fuel tank.

NOTE: Some models have drain plug on underside of fuel tank. If so, remove drain plug to drain all fuel. If heater does not have drain plug, drain fuel through fuel cap opening. Be sure all fuel is removed.

2. Replace drain plug if provided.
3. If any debris is noted in old fuel, add 1 or 2 quarts of clean Kerosene to tank, stir, and drain again. This will prevent excess debris from clogging filters during future use.
4. Replace fuel cap or drain plug. Properly dispose of old and dirty fuel. Check with local automotive service stations that recycle oil.
5. If storing, store heater in dry place. Make sure storage place is free of dust and corrosive fumes.

IMPORTANT: Do not store Kerosene over summer months for use during next heating season. Using old fuel could damage heater.

Preventative Maintenance Schedule

⚠WARNING ***Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur.***

Item	How Often	How To
Fuel tank	Flush every 150-200 hours of operation or as needed	See *Storing, Transporting, or Shipping*, above
Air output and lint filters	Replace every 500 hours of operation or once a year	See *Air Output, Air Intake, and Lint Filters*, page 6
Air intake filter	Wash and dry with soap and water every 500 hours of operation or as needed	See *Air Output, Air Intake, and Lint Filters*, page 6
Fuel filter	Clean twice a heating season or as needed	See *Fuel Filter*, page 7
Fan blades	Clean every season or as needed	See *Fan*, page 6
Motor	Not required/permanently lubricated	

For Repair Parts, call 1-800-323-0620

24 hours a day — 365 days a year

Please provide following information:
-Model number
-Serial number (if any)
-Part description and number as shown in parts list

Address parts correspondence to:
Grainger Parts
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1657 Shermer Road
Northbrook, IL 60065-3074 U.S.A.

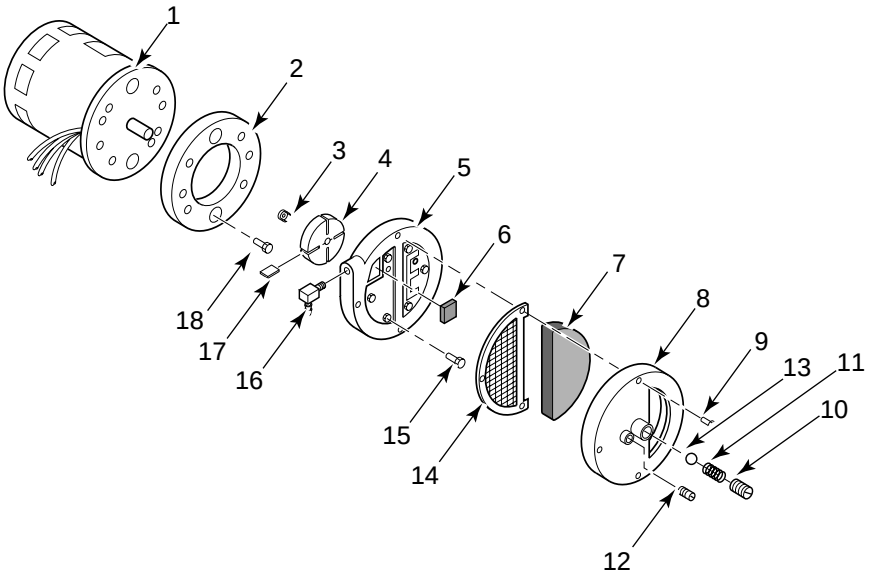

Figure 29 - Motor and Pump Assembly for Models 2E510F and 2E511F

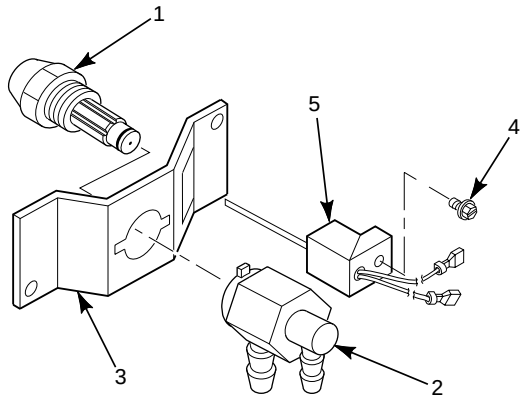

Figure 30 - Burner Head Assembly for All Models

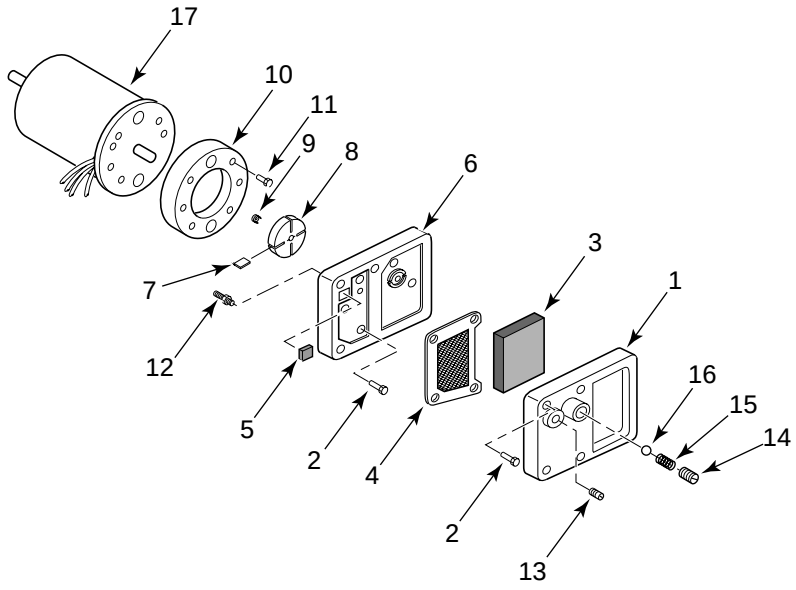

Figure 31 - Motor and Pump Assembly for Models 3E218E and 3E219E

Models 2E510F, 2E511F, 3E218E, and 3E219E

Repair Parts List for Motor and Pump Assembly for Models 2E510F and 2E511F - Figure 29

Ref. No.	Description	Part Number	2E510F Qty.	2E511F Qty.
1	Motor	102001-28	1	1
2	Pump Body	079975-02	1	—
		079975-03	—	1
3	Insert	M22009	1	1
4	Rotor	M22456-1	1	—
		M22456-2	—	1
5	End Pump Cover	M29608	1	1
6	Lint Filter	M29632	1	1
7	Intake Filter	M29633	1	1
8	End Cover	M29609	1	1
9	#10-32 x 1" Screw	*M12461-31	3	3
10	Adjusting Screw	M27694	1	1
11	Pressure Relief Spring	M10993-1	1	1
12	Plug	M22997	1	1
13	1/4" Diameter Steel Ball	M8940	1	1
14	Output Filter	M29612-01	1	1
15	#10-32 x 1" Screw	*M12461-31	6	—
	#10-32 x 1 1/8" Screw	M12461-32	—	6
16	90° Elbow	103676-01	1	1
17	Blade	M8643	4	—
		M8643-2	—	4
18	#10-32 x 5/8" Screw	*FHPF3-5C	2	—
	#10-32 x 3/4" Screw	*FHPF3-6C	—	2

(*) Standard hardware item, available locally.

Repair Parts List for Burner Head Assembly for All Models - Figure 30

Ref. No.	Description	Part Number	2E510F Qty.	2E511F Qty.	3E218E Qty.	3E219E Qty.
1	Nozzle	HA3006	1	—	—	—
		HA3024	—	1	—	—
		HA3027	—	—	1	—
		HA3028	—	—	—	1
2	Nozzle Adapter	104056-01	1	1	—	—
		104054-01	—	—	1	1
3	Nozzle Adapter Bracket	102336-01	1	1	1	1
4	Screw/Washer Assy.	104023-01	1	1	1	1
5	Ignitor	102548-03	1	1	1	1

Repair Parts List for Motor and Pump Assembly for Models 3E218E and 3E219E - Figure 31

Ref. No.	Description	Part Number	3E218E Qty.	3E219E Qty.
1	End Filter Cover	M16545	1	1
2	#10-32 x 1" Screw	*M12461-31	10	10
3	Intake Filter	M12179	1	1
4	Output Filter	M12244-1	1	1
5	Lint Filter	M11637	1	1
6	End Pump Cover	M50545	1	1
7	Blade	M8643	4	4
8	Rotor Pump	M22456-1	1	1
9	Rotor Insert	M22009	1	1
10	Pump Body	079975-02	1	1
11	#10-32 x 1/4" Screw	*FHPF3-5C	2	2
12	Barb Fitting	M50820-02	1	1
13	Plug	M22997	1	1
14	Adjusting Screw	M27694	1	1
15	Relief Spring	M10993-1	1	1
16	1/4" Diameter Ball	M8940	1	1
17	Motor	102001-30	1	1

(*) Standard hardware item, available locally.

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24 hours a day — 365 days a year

Please provide following information:
-Model number
-Serial number (if any)
-Part description and number as shown in parts list

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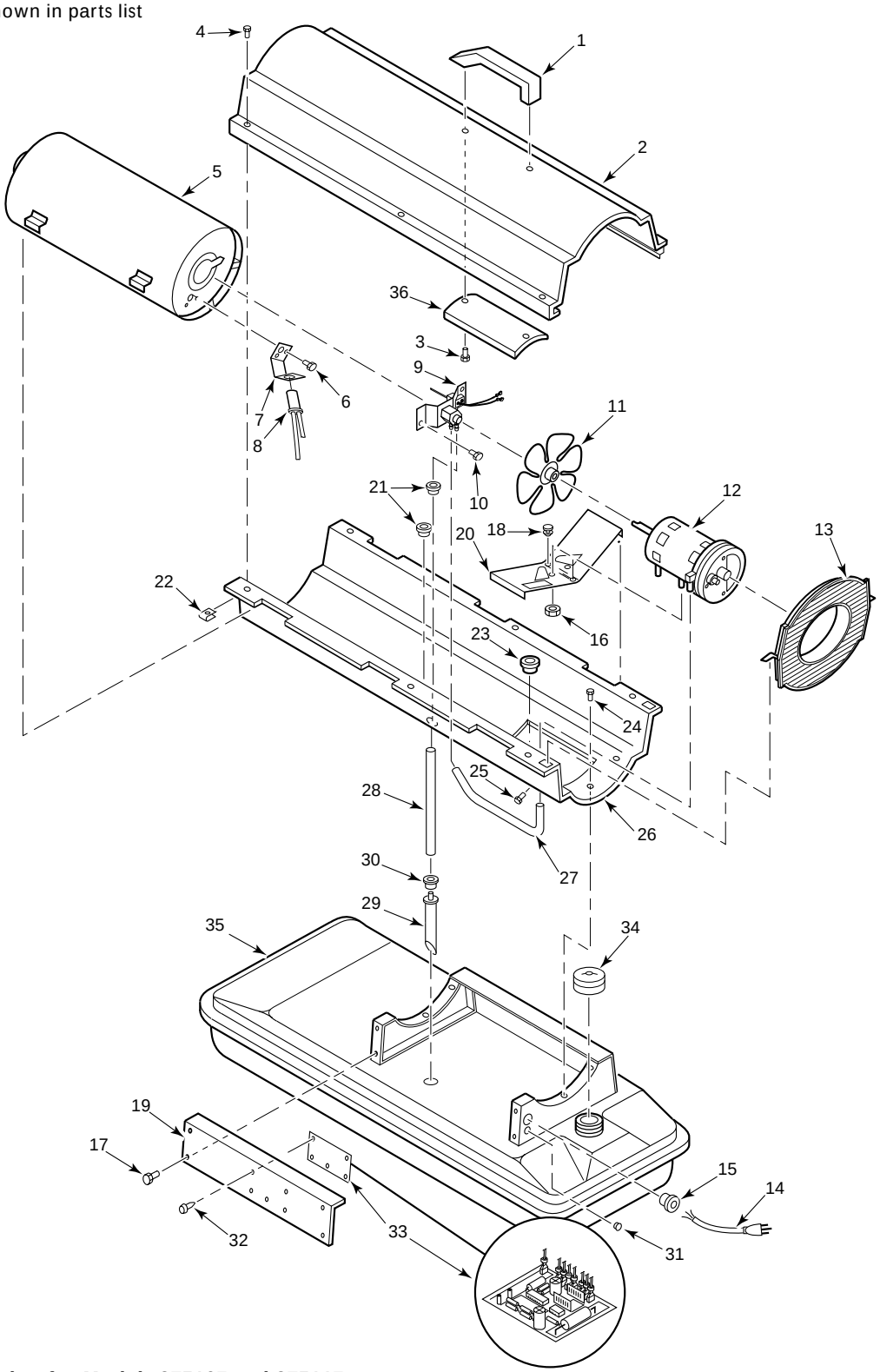

Figure 32 - Repair Parts Illustration for Models 2E510F and 2E511F

Models 2E510F, 2E511F, 3E218E, and 3E219E

Repair Parts List for Models 2E510F and 2E511F

Ref. No.	Description		Part Number	2E510F Qty.	2E511F Qty.
1	Handle		M51104-01	1	1
2	Upper Shell		098511-67	1	1
3	#10-16 x 3/4" Screw	*	M11084-29	2	2
4	#10-16 x 1/2" Screw	*	M15823-27	6	6
5	Combustion Chamber		098512-58	1	—
			098512-50	—	1
6	#6-32 x 3/8" Screw	*	M10908-2	2	2
7	Photocell Bracket		103154-03	1	1
8	Photocell Assembly		M16656-24	1	1
9	Burner Assembly		†	1	1
10	#10-16 x 3/8" Screw	*	M11084-26	2	2
11	Fan		103684-01	1	1
12	Motor and Pump Assembly		†	1	1
13	Fan Guard		M51105-01	1	1
14	Power Cord		098219-38	1	1
15	Strain Relief Bushing		M11143-1	1	1
16	1/4-20 Hex Lock Nut		NTC-4C	2	2
17	#10-16 x 3/8" Screw	*	M11084-26	4	4
18	Rubber Bumper		M50631	2	2
19	Side Cover		097461-09	1	1
20	Motor Bracket		101205-01	1	1
21	Bushing		M30865-02	2	2
22	Clip Nut		M11271-8	6	6
23	Bushing		M50104-02	1	1
24	#10-16 x 3/8" Screw	*	M11084-26	6	6
25	#8-32 x 3/8" Screw	*	M10908-14	1	1
26	Lower Shell		098511-234	1	1
27	Rubber Airline		M50814-06	1	1
28	Fuel Line		079973-01	1	1
29	Fuel Filter (with Bushing)		M50876-04	1	—
			M50876-05	—	1
30	Rubber Bushing		M10990-3	1	1
31	Button Plug		101695-01	1	1
32	PCB Support		102349-01	5	5
33	Ignition Control Assembly		104068-02	1	1
34	Fuel Cap (Includes Gasket)		097702-01	1	1
35	Fuel Tank		108088-01	1	—
			108088-03	—	1
36	Shell Heat Shield		M51108-01	1	1
	Wire Tie		103814-01	1	1

(*) Standard hardware item, available locally.

( ) Not shown.

(†) Not available as an assembly, see page 13.

For Repair Parts, call 1-800-323-0620

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Please provide following information:
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-Serial number (if any)
-Part description and number as shown in parts list

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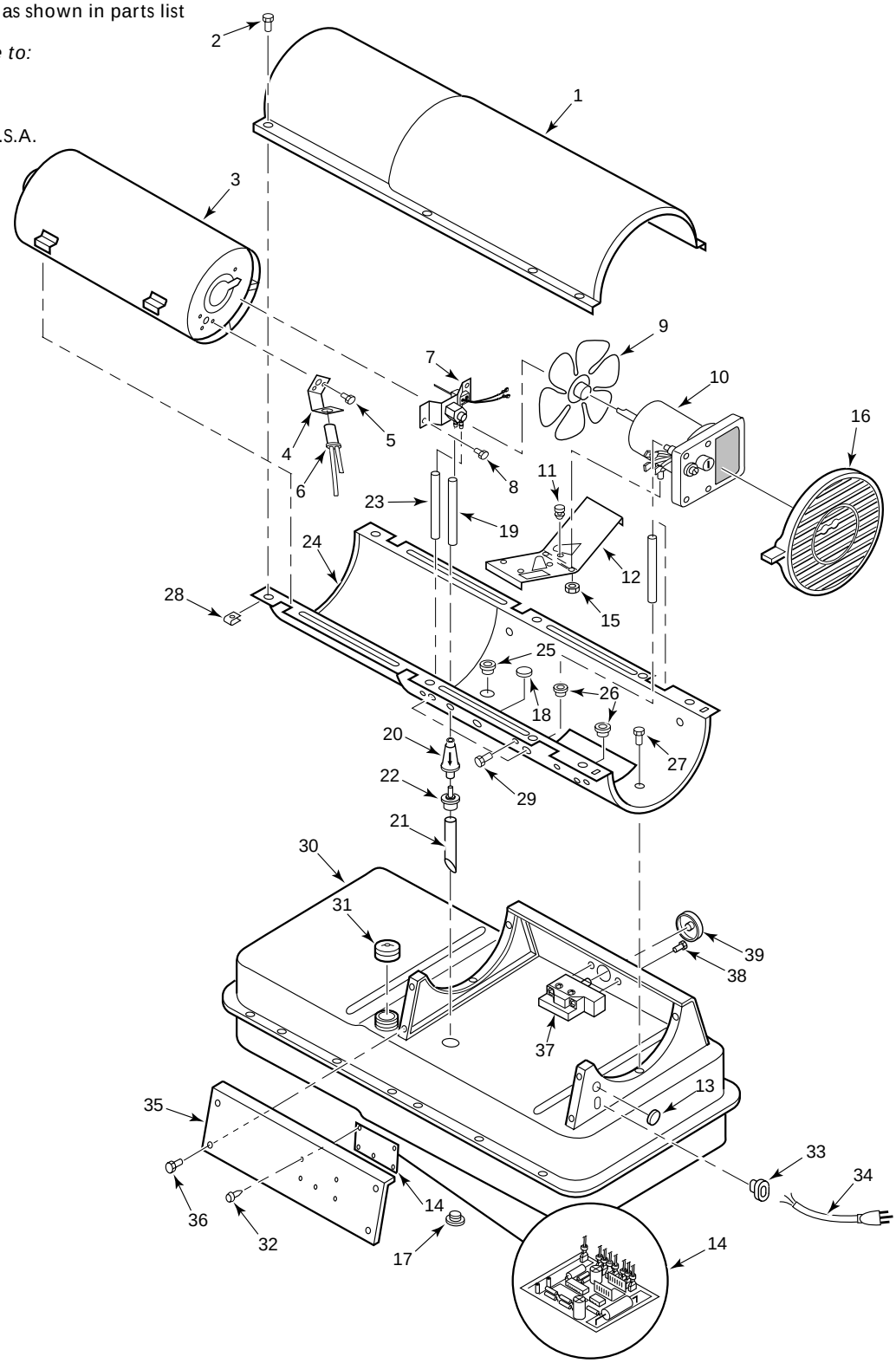

Figure 33 - Repair Parts Illustration for Model 3E218E

Models 2E510F, 2E511F, 3E218E, and 3E219E

Repair Parts List for Model 3E218E

Ref. No.	Description	Part Number	Qty.
1	Upper Shell	098511-164	1
2	#10-16 x 1/2" Screw	*M15823-27	8
3	Combustion Chamber	098512-54	1
4	Photocell Bracket	103971-01	1
5	#6-32 x 3/8" Screw	*M10908-2	2
6	Photocell Assembly	M16656-24	1
7	Burner Head Assembly	†	1
8	#10-16 x 1/2" Screw	*M11084-27	2
9	Fan	097293-01	1
10	Motor and Pump Assembly	†	1
11	Rubber Bumper	M50631	2
12	Motor Mounting Bracket	101206-01	1
13	Button Plug	101695-01	1
14	Ignition Control Assembly	104068-02	1
15	1/4-20 Hex Lock Nut	NTC-4C	2
16	Fan Guard	M51114-01	1
17	Drain Plug (Includes O-ring)	M27417	1
18	Button Plug	099213-01	1
19	Fuel Line	M51345-06	1
20	Fuel Filter	099743-01	1
21	Fuel Line Tube	M51151-01	1
22	Rubber Bushing	M10990-3	1
23	Airline	M50814-03	1
24	Lower Shell	098511-236	1
25	Bushing	M50104-03	1
26	Bushing	M50104-01	2
27	#10-16 x 1/2" Screw	*M11084-27	6
28	Clip Nut	M11271-8	8
29	#8-32 x 3/8" Screw	*M10908-14	1
30	Fuel Tank	108088-04	1
31	Fuel Cap (Includes Gasket)	097702-01	1
32	P.C. Board Support	102349-01	5
33	Strain Relief Bushing	M11143-1	1
34	Power Cord	098219-38	1
35	Side Cover	M51077-15	1
36	#10-16 x 1/2" Screw	*M11084-27	4
37	Thermostat	097657-03	1
38	#6-32 x 1/4" Screw	M10908-1	2
39	Thermostat Knob	104905-01	1
	Wire Clip (Secures Wires of Thermostat)	099650-01	1
	Wire Tie	103814-01	1

(*) Standard hardware item, available locally.

( ) Not shown.

(†) Not available as an assembly, see page 13.

For Repair Parts, call 1-800-323-0620

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Please provide following information:
-Model number
-Serial number (if any)
-Part description and number as shown in parts list

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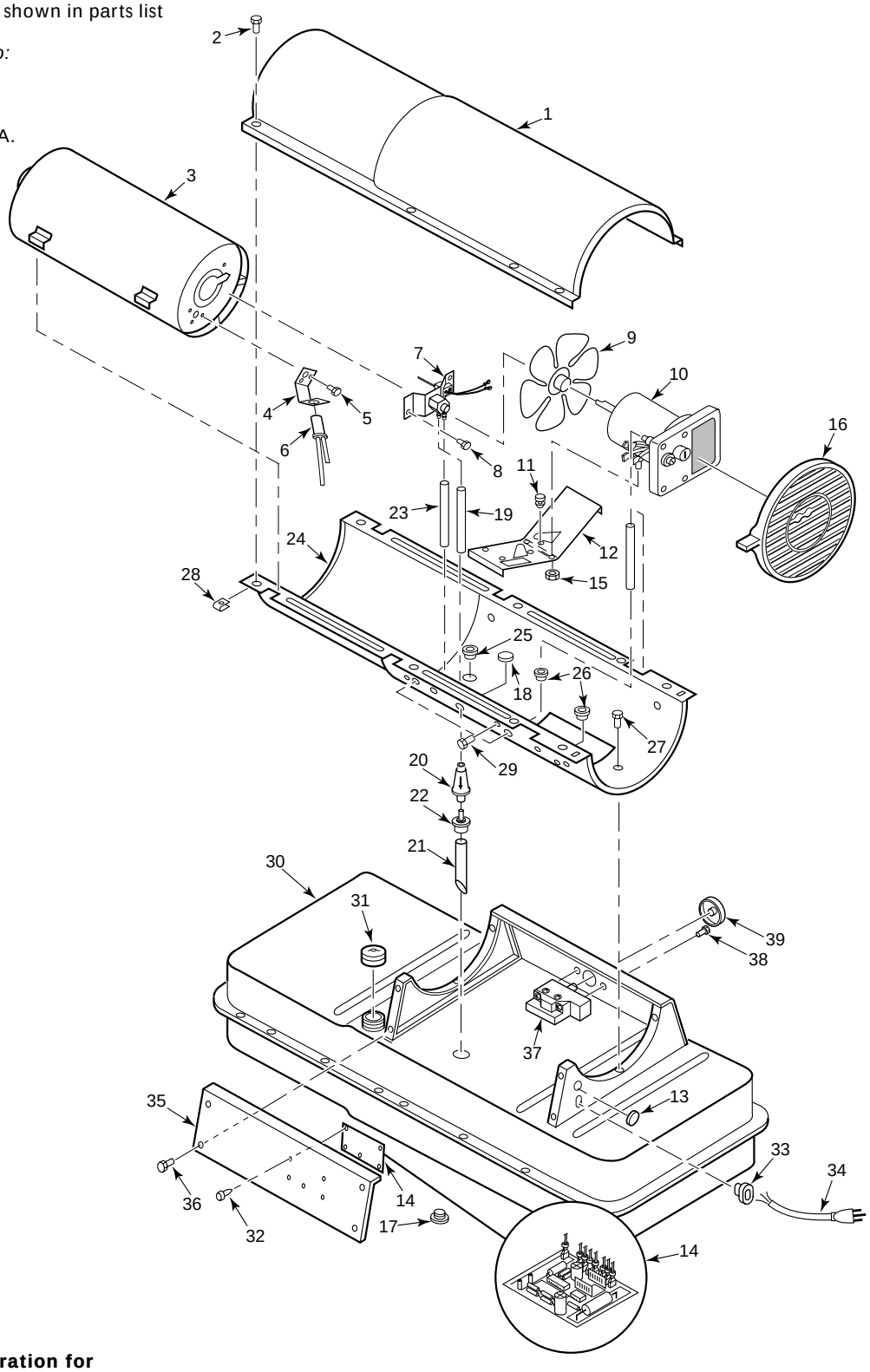

Figure 34 - Repair Parts Illustration for Model 3E219E

Models 2E510F, 2E511F, 3E218E, and 3E219E

Repair Parts List for Model 3E219E

Ref. No.	Description	Part Number	Qty.
1	Upper Shell	098511-164	1
2	#10-16 x 1/2" Screw	* M15823-27	8
3	Combustion Chamber	098512-59	1
4	Photocell Bracket	099229-01	1
5	#6-32 x 3/8" Screw	* M10908-2	2
6	Photocell Assembly	M16656-24	1
7	Burner Head Assembly	†	1
8	#10-16 x 1/2" Screw	* M11084-27	2
9	Fan	102042-01	1
10	Motor and Pump Assembly	†	1
11	Rubber Bumper	M50631	2
12	Motor Mounting Bracket	101206-01	1
13	Button Plug	101695-01	1
14	Ignition Control Assembly	104068-02	1
15	1/4-20 Hex Lock Nut	NTC-4C	2
16	Fan Guard	M51114-01	1
17	Drain Plug (includes O-ring)	M27417	1
18	Button Plug	099213-01	1
19	Fuel Line	M51345-06	1
20	Fuel Filter	099743-01	1
21	Fuel Line Tube	M51151-02	1
22	Rubber Bushing	M10990-3	1
23	Airline	M50814-03	1
24	Lower Shell	098511-236	1
25	Bushing	M50104-03	1
26	Bushing	M50104-01	2
27	#10-16 x 1/2" Screw	* M11084-27	6
28	Clip Nut	M11271-8	8
29	#8-32 x 3/8" Screw	* M10908-14	1
30	Fuel Tank	108088-05	1
31	Fuel Cap (Includes Gasket)	097702-01	1
32	P.C. Board Support	102349-01	5
33	Strain Relief Bushing	M11143-1	1
34	Power Cord	098219-38	1
35	Side Cover	M51077-15	1
36	#10-16 x 1/2" Screw	* M11084-27	4
37	Thermostat	097657-03	1
38	#6-32 x 1/4" Screw	M10908-1	2
39	Thermostat Knob	104905-01	1
	Wire Clip (Secures Wires of Thermostat)	099650-01	1
	Wire Tie	103814-01	1

(*) Standard hardware item, available locally.

( ) Not shown.

(†) Not available as an assembly, see page 13.

Dayton® Portable Oil-Fired Heaters

Repair Parts List for Handle and Wheel Group Models 3E218E and 3E219E

Ref. No.	Description	Part Number 3E218E	3E219E	Qty.
1	Front Handle	HA2203	HA2204	1
2	Rear Handle	HA2203	HA2204	1
3	#10 - 24 x 1 3/4" Oval Head Screw	M12345-33	M12345-33	8
4	Wheel Support Frame	M12342-3	M12831-3	1
5	10-24 Torque Lock Hex Nut	NTC-3BZ	NTC-3BZ	8
6	Axle	M51015-01	M16801-2	1
7	Wheel (contains 2)	107426-01	107426-01	1
8	Cap Nut	M28526	M28526	2

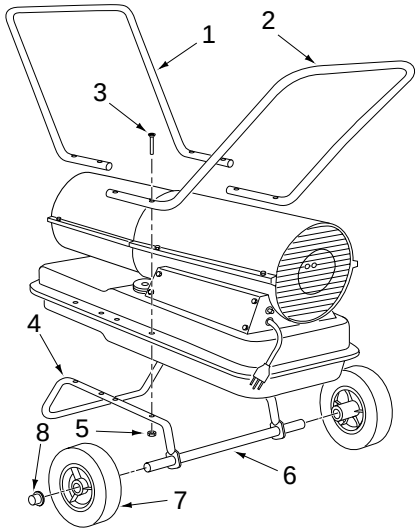

Figure 35 - Handle and Wheel Assembly

Maintenance Kits

	Part Numbers for Models 2E510F	2E511F	3E218E	3E219E
Ignition Control	104068-02	104068-02	104068-02	104068-02
Ignitor	102548-03	102548-03	102548-03	102548-03
Filter Kit	HA3014	HA3014	HA3017	HA3017
Nozzle Kit	HA3006	HA3024	HA3027	HA3028
Rotor/Air Pump Kit	HA3004	HA3005	HA3004	HA3004
Handle	—	—	HA2203	HA2204
Photocell	M16656-24	M16656-24	M16656-24	M16656-24
Pump Adjustment	HA3020	HA3020	HA3020	HA3020

Accessories

	2E510F	2E511F	3E218E	3E219E
Air Gauge Kit	HA1180	HA1180	HA1180	HA1180
Standard Wheels and Handle Kit	HA1206	HA1206	——	——
Heavy Duty Wheels and Handle Kit	HA1202	HA1202	——	——

Models 2E510F, 2E511F, 3E218E, and 3E219E

Wiring Diagram

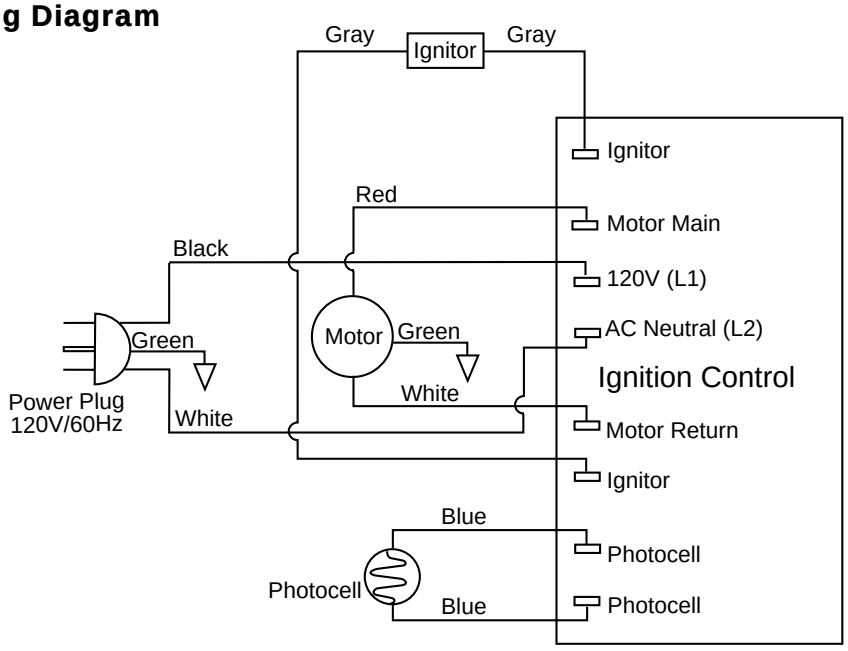

Figure 36 - Wiring Diagram, Models 2E510F and 2E511F

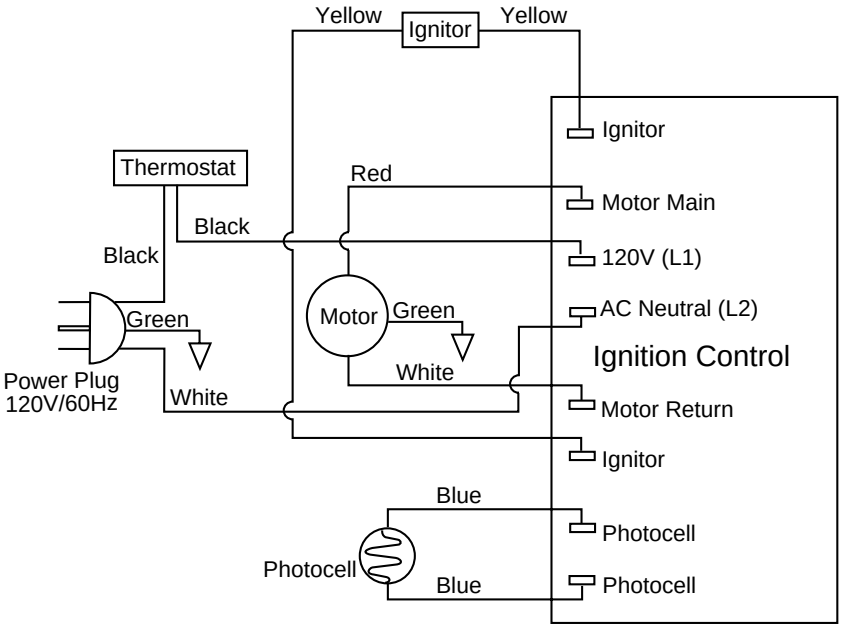

Figure 37 - Wiring Diagram, Models 3E218E and 3E219E

Dayton® Portable Oil-Fired Heaters

Troubleshooting Chart

⚠WARNING ***Never service heater while it is plugged in, operating, or hot. Severe burns and electrical shock can occur.***

Symptom	Possible Cause(s)	Corrective Action
Motor does not start five seconds after heater is plugged in	1. No power to heater	1. Check circuit breaker in electrical panel
	2. Thermostat setting too low, if equipped	2. Turn thermostat knob to a higher setting
	⚠WARNING ***High Voltage!***	
	3. Bad electrical connection between motor and ignition control assembly or ignition control assembly and power cord	3. Check all electrical connections. See Wiring Diagram, page 21
	4. Blown fuse on ignition control assembly	4. See Ignition Control Assembly, page 10
	5. Binding pump rotor	5. If fan does not turn freely, see Pump Rotor, page 9
	6. Defective ignition control assembly	6. Replace ignition control assembly
	7. Defective motor	7. Replace Motor
Motor starts and runs but heater does not ignite	1. No fuel in tank	1. Fill tank with Kerosene
	2. Pump pressure incorrect	2. See Pump Pressure Adjustment, page 7
	3. Dirty fuel filter	3. See Fuel Filter, page 7
	4. Obstruction in nozzle assembly	4. See Nozzle, page 9
	5. Water in fuel tank	5. Drain and flush fuel tank with clean kerosene. See Storing, Transporting, or Shipping, page 11
	⚠WARNING ***High Voltage!***	
	6. Bad electrical connection between ignitor and ignition control assembly	6. Check electrical connections. See Wiring Diagram, page 21
	7. Defective ignitor	7. Replace ignitor, see page 8
	8. Defective ignition control assembly	8. Replace ignition control assembly

Models 2E510F, 2E511F, 3E218E, and 3E219E

Troubleshooting Chart (Continued)

Symptom	Possible Cause(s)	Corrective Action
Heater ignites but ignition control assembly shuts heater off after a short period of time	1. Pump pressure incorrect	1. See Pump Pressure Adjustment, page 7
	2. Dirty air intake, air output, and/or lint filter	2. See Air Output, Air Intake, and Lint Filters, page 6
	3. Dirty fuel filter	3. See Fuel Filter, page 7
	4. Obstruction in nozzle assembly	4. See Nozzle, page 9
	5. Photocell assembly not properly installed (not seeing the flame)	5. Make sure photocell boot is properly seated in bracket
	⚠WARNING ***High Voltage!***	
	6. Dirty photocell lens	6. Clean photocell lens
	7. Bad electrical connection between photocell and ignition control assembly	7. Check electrical connections. See Wiring Diagram, page 21
	8. Defective photocell	8. Replace photocell
	9. Defective ignition control assembly	9. Replace ignition control assembly

Dayton® Portable Oil-Fired Heaters

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